scanning the decoded macro for a virus by comparing the decoded macro to the comparison data;

wherein the comparison data includes a first suspect instruction identifier and a second suspect instruction identifier;

wherein the scanning the decoded macro to determine whether it includes a virus comprises:

determining whether the decoded macro includes a first portion which corresponds to the first suspect instruction identifier;

determining whether the decoded macro includes a second portion which corresponds to the second suspect instruction identifier;

determining that the decoded macro includes the virus if the decoded macro includes the first and second portions; and

wherein the first suspect instruction identifier detects a macro virus enablement instruction.

2. *The method of claim 1, further comprising:*

removing the virus from the macro to produce a treated macro if the step of scanning the decoded macro indicates that the macro is infected with the virus.

3. (Amended) The method of claim 1, wherein the [step of] retrieving a macro comprises:

accessing a targeted file;

determining whether the targeted file is a template file;

if the targeted file is not a template file, determining whether the targeted file includes an embedded macro; and

if the targeted file includes an embedded macro, locating the embedded macro.

4. Canceled.

5. Canceled.

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6. Canceled.

4 7. (Amended) The method of claim 1 [6], wherein the second suspect instruction identifier detects a macro virus reproduction instruction.

5 8. (Amended) The method of claim 1 [4], wherein the [step of] removing the virus comprises:

locating a first suspect macro instruction in the decoded macro which corresponds to the first suspect instruction identifier; and

removing the first suspect macro instruction.

13 9. (Amended) [The method of claim 8,] In a computer system comprising a processor and a memory, a method for detecting viruses in macros, the method comprising:

obtaining comparison data including information for detecting a virus;

retrieving a macro;

decoding the macro to produce a decoded macro;

scanning the decoded macro for a virus by comparing the decoded macro to the comparison data; and

removing the virus from the macro to produce a treated macro if the step of scanning the decoded macro indicates that the macro is infected with the virus;

verifying the integrity of the treated macro; and

replacing the infected macro in a targeted file with the treated macro dependent upon the integrity verification of the treated macro.

10. 10. *The method of claim 8, wherein the step of removing the first suspect macro instruction includes replacing the first suspect instruction with a benign instruction.*

11. *The method of claim 8, wherein the step of removing the virus comprises:*

locating a second suspect macro instruction in the decoded macro which corresponds to the second suspect instruction identifier; and

removing the second suspect macro instruction from the decoded macro to produce a treated macro.

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N.E.

12. The method of claim 1, wherein the comparison data includes a plurality of sets of suspect instruction identifiers.

Amd C4

B4

10/15. (Amended) [The method of claim 12,] In a computer system comprising a processor and a memory, a method for detecting viruses in macros, the method comprising:

obtaining comparison data including information for detecting a virus;

retrieving a macro;

decoding the macro to produce a decoded macro;

scanning the decoded macro for a virus by comparing the decoded macro to the comparison data;

wherein the comparison data includes a first suspect instruction identifier and a second suspect instruction identifiers; and

wherein a first set of suspect instruction identifiers comprises the strings 73 CB 00 0C 6C 01 00 and 67 C2 80.

N.E.

14. The method of claim 13, wherein a second set of suspect instruction identifiers comprises the strings 73 CB 00 0C 6C 01 00 and 64 6F 02 67 DE 00 73 87 01 12 73 7F, a third set of suspect instruction identifiers comprises the strings 73 CB 00 0C 6C 01 00 and 6D 61 63 72 6F 73 76 08, a fourth set of suspect instruction identifiers comprises the strings 12 6C 01 00 and 64 67 C2 80 6A 0F 47, and a fifth set of suspect instruction identifiers comprises the strings 79 7C 66 6F 72 6D 61 74 20 63 6A and 80 05 6A 07 43 4F 4D.

Amd C6

B5

12/15. (Amended) In a computer system comprising a processor and a memory, a method for detecting viruses in macros, the method comprising:

retrieving a macro;

obtaining comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier;

scanning the macro to determine whether the macro includes a first portion which corresponds to the first suspect instruction identifier;

scanning the macro to determine whether the macro includes a second portion which corresponds to the second suspect instruction identifier; and

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determining that the macro is infected with the virus if the macro includes the first and second portions;

wherein the first instruction identifier includes the string 73 CB 00 0C 6C 01 00 and the second suspect instruction identifier includes the string 67 C2 80.

16. *The method of claim 15, further comprising:*

treating the macro to produce a treated macro if it is determined that the macro includes the first and second portions.

17. *The method of claim 16, wherein the step of treating the macro comprises:*

locating a first macro instruction in the infected macro which corresponds to the first suspect instruction identifier; and

removing the first macro instruction from the infected macro to repair the infected macro.

18. *The method of claim 17, wherein the step of treating the macro comprises:*

locating a second macro instruction in the infected macro which corresponds to the second suspect instruction identifier; and

removing the second macro instruction from the infected macro to repair the infected macro.

19. *The method of claim 15, wherein the step of retrieving a macro comprises:*

accessing a targeted file; and

determining whether the targeted file is a template file;

if the file is not a template file, determining whether the targeted file includes an embedded macro; and

if the file includes an embedded macro, locating the embedded macro.

20. Canceled.

21. *The method of claim 15, wherein the comparison data includes a plurality of sets of suspect instruction identifiers.*

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16 22. (Amended) [The method of claim 21,] In a computer system comprising a processor and a memory, a method for detecting viruses in macros, the method comprising:

retrieving a macro;

obtaining comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier;

scanning the macro to determine whether the macro includes a first portion which corresponds to the first suspect instruction identifier;

scanning the macro to determine whether the macro includes a second portion which corresponds to the second suspect instruction identifier;

determining that the macro is infected with the virus if the macro includes the first and second portions,

wherein the comparison data includes a plurality of sets of suspect instruction identifiers; and

wherein a first set of suspect instruction identifiers comprises the strings 73 CB 00 0C 6C 01 00 and 67 C2 80, a second set of suspect instruction comprises the strings 73 CB 00 0C 6C 01 00 and 64 6F 02 67 DE 00 73 87 01 12 73 7F, a third set of suspect instruction identifiers comprises the strings 73 CB 00 0C 6C 01 00 and 6D 61 63 72 6F 73 76 08, a fourth set of suspect instruction identifiers comprises the strings 12 6C 01 00 and 64 67 C2 80 6A 0F 47, and a fifth set of suspect instruction identifiers comprises the strings 79 7C 66 6F 72 6D 61 74 20 63 6A and 80 05 6A 07 ~~43 4F 4D.~~

19 ~~23~~. (Amended) [The method of claim 16,] In a computer system comprising a processor and a memory, a method for detecting viruses in macros, the method comprising:

retrieving a macro;

obtaining comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier;

scanning the macro to determine whether the macro includes a first portion which corresponds to the first suspect instruction identifier;

scanning the macro to determine whether the macro includes a second portion which corresponds to the second suspect instruction identifier;

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determining that the macro is infected with the virus if the macro includes the first and second portions; and

treating the macro to produce a treated macro if it is determined that the macro includes the firs and second portions, further comprising:

accessing a targeted file; [and]

locating a macro within the targeted file;

removing the macro from the targeted file; and

adding the treated macro to the targeted file to produce a corrected file.

24. (Amended) An apparatus for detecting viruses in macros, the apparatus comprising:

a virus information module, for storing comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier; [and]

a macro virus scanning module, in communication with the virus information module, for receiving the comparison data and scanning a macro to determine whether the macro includes a first portion which corresponds to the first suspect instruction identifier and a second portion which corresponds to the second suspect instruction identifier;

a macro locating and decoding module, in communication with the macro virus scanning module, for accessing a targeted file, determining whether the targeted file is a template file, determining whether the targeted file includes an embedded macro, and decoding the macro to produce a decoded macro;

a macro treating module, in communication with the virus information module, for accessing the decoded macro and removing a first macro instruction which corresponds to the first suspect instruction identifier and a second macro instruction which corresponds to the second suspect instruction identifier to produce a treated macro; and

a file correcting module, in communication with the macro treating module, for accessing the targeted file, locating the macro within the targeted file, removing the macro from the targeted file and adding the treated macro to the targeted file to produce a corrected file.

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25. Canceled.

26. Canceled.

27. Canceled.

~~28.~~ (Amended) [The apparatus of claim 27,] An apparatus for detecting viruses in macros, the apparatus comprising:

a virus information module, for storing comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier; and

a macro virus scanning module, in communication with the virus information module, for receiving the comparison data and scanning a macro to determine whether the macro includes a first portion which corresponds to the first suspect instruction identifier and a second portion which corresponds to the second suspect instruction identifier, wherein the first instruction identifier includes the string 73 CB 00 0C 6C 01 00 and the second suspect instruction identifier includes the string 67 C2 80.

~~29.~~ (Amended) The apparatus of claim ~~24~~ [27], wherein the comparison data includes a plurality of sets of suspect instruction identifiers.

~~30.~~ (Amended) [The apparatus of claim 29,] An apparatus for detecting viruses in macros, the apparatus comprising:

a virus information module, for storing comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier; and

a macro virus scanning module, in communication with the virus information module, for receiving the comparison data and scanning a macro to determine whether the macro includes a first portion which corresponds to the first suspect instruction identifier and a second portion which corresponds to the second suspect instruction identifier;

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wherein the comparison data includes a plurality of sets of suspect instruction identifies; and

wherein a first set of suspect instruction identifiers comprises the strings the strings 73 CB 00 0C 6C 01 00 and 67 C2 80, a second set of suspect instruction comprises the strings 73 CB 00 0C 6C 01 00 and 64 6F 02 67 DE 00 73 87 01 12 73 7F, a third set of suspect instruction identifiers comprises the strings 73 CB 00 0C 6C 01 00 and 6D 61 63 72 6F 73 76 08, a fourth set of suspect instruction identifiers comprises the strings 12 6C 01 00 and 64 67 C2 80 6A 0F 47, and a fifth set of suspect instruction identifiers comprises the strings 79 7C 66 6F 72 6D 61 74 20 63 6A and 80 ~~05 6A 07 43 4F 4D.~~

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31. (Amended) An apparatus for detecting viruses in macros, the apparatus comprising:

means for obtaining comparison data for detecting a virus, the comparison data including a first suspect instruction identifier and a second suspect instruction identifier;

means for scanning the macro to determine whether a macro includes a first portion which corresponds to the first suspect instruction identifier;

means for scanning the macro to determine whether the macro includes a second portion which corresponds to the second suspect instruction identifier; [and]

means for determining that the macro is infected with the virus if the macro includes the first and second portions;

means for accessing a targeted file and determining whether the targeted file includes a macro; and

means for correcting a file, the means for correcting a file including means for accessing the targeted file, means for removing the macro from the targeted file and means for adding the treated macro to the targeted file to produce a corrected file.

32. *The apparatus of claim 31, further comprising:*

means for locating a first macro instruction and a second macro instruction within the macro which respectively correspond to the first suspect instruction identifier and the second suspect instruction identifier; and

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